



ARM Group LLC

Engineers and Scientists

February 23, 2021

Ms. Barbara Brown
Project Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: Parcel B13 Supplemental Piezometer
Abandonment Request Letter
Area B: Parcel B13
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

On behalf of Tradepoint Atlantic (TPA), ARM Group LLC (ARM) is pleased to provide the following Supplemental Piezometer Abandonments Request Letter for Parcel B13 on the TPA property. This letter is submitted to the Maryland Department of the Environment (MDE) and United States Environmental Protection Agency (USEPA) for approval prior to implementing piezometer abandonment activities as outlined herein. This document supplements the previous submission of the Site-Wide Piezometer Abandonments Request Letter dated January 29, 2020 and the Supplemental Site-Wide Piezometer Abandonments Request Letters dated March 20, 2020 and January 26, 2021. These letters were approved by MDE on April 9, 2020, March 23, 2020, and February 19, 2021, respectively. Work covered by these letters is ongoing.

As shown on **Figure 1**, a total of five shallow piezometers (B13-086-PZ, B13-088-PZ, B13-089-PZ, B13-090-PZ, and B13-091-PZ) are proposed to be abandoned on Parcel B13. These piezometers were installed and sampled in accordance with the Pre-Development Supplemental Investigation Work Plan Update Letter for the Project Liberty Area (Revision 1 dated January 6, 2021). Note that, as shown on **Figure 1**, these piezometers are not associated with the suspected contaminated area or slag stockpiles located in the northeast portion of Parcel B13.

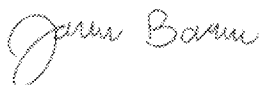
Upon approval from the MDE, each of the piezometers will be properly abandoned in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36. Relevant construction details (total depths, screen intervals, etc.) for the piezometers shown on the figure are provided in **Table 1**. The combined soil boring and piezometer construction logs for these locations are provided as **Attachment 1**. TPA understands that the agencies may in the future require the installation of additional groundwater monitoring points as part of the property-wide monitoring program.

In accordance with current MDE guidance, each piezometer will be gauged a final time on the abandonment date to confirm that NAPL has not accumulated in the casing. The MDE will be notified if NAPL is detected in any piezometer which was not previously determined to be impacted, in which case the piezometer would not be abandoned at that time and additional actions would be coordinated as needed.

A brief abandonment letter report will be provided to the MDE following the completion of the proposed abandonments, which shall include the standard abandonment forms and provide the final gauging information. This will be a comprehensive report that will include the abandonments proposed herein, as well as those described in the preceding Site-Wide Piezometer Abandonments Request Letters (dated January 29, 2020, March 20, 2020, and January 26, 2021).

If you have questions regarding any information covered in this document, please feel free to contact ARM Group LLC at (410) 290-7775.

Respectfully Submitted,
ARM Group LLC



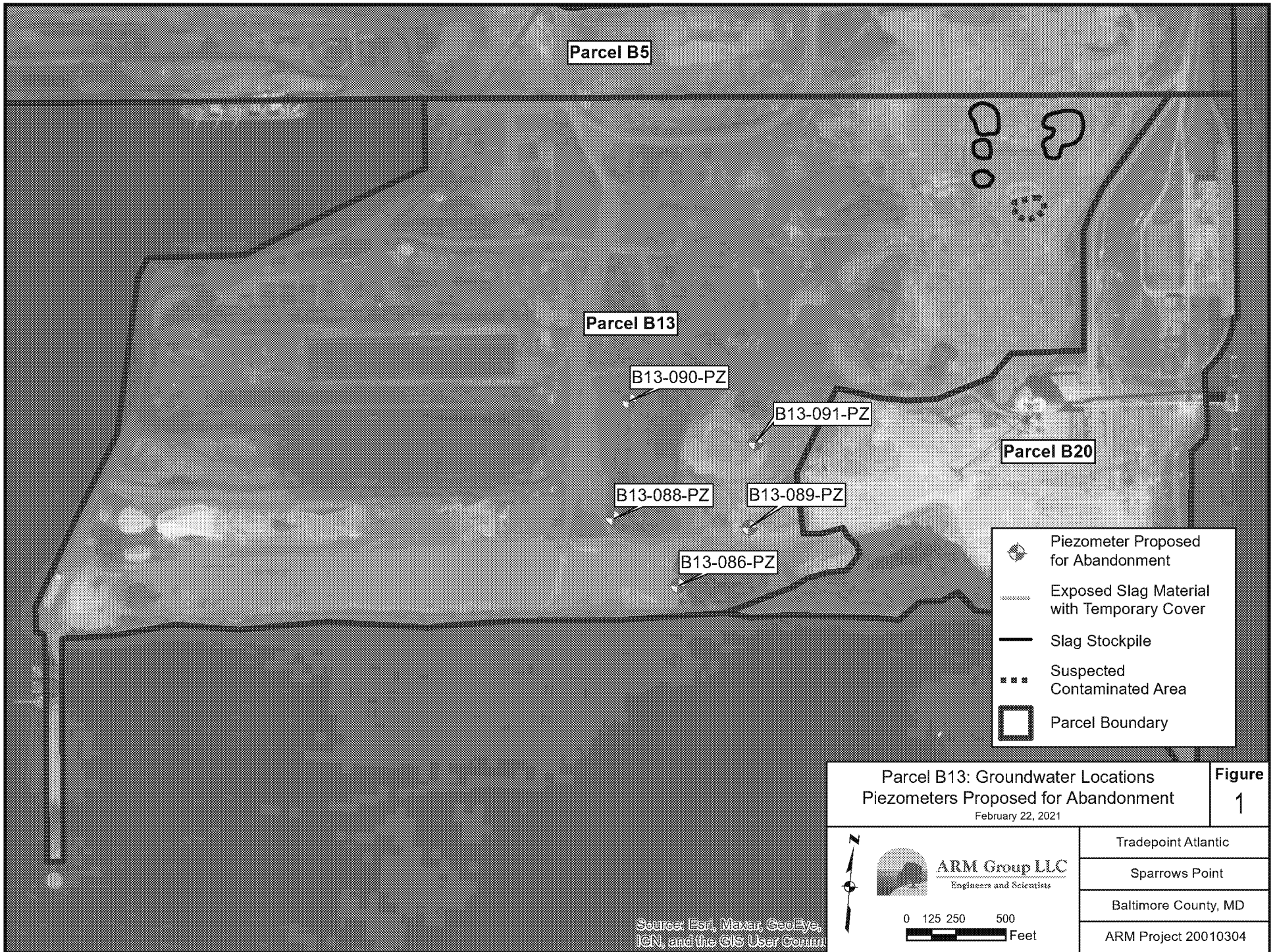
Joshua M. Barna, G.I.T.
Staff Geologist



Eric S. Magdar, P.G.
Vice President
QA Reviewer



FIGURES



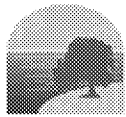
TABLES

Table 1
Proposed Piezometer Abandonments

Piezometer Type	Parcel	Piezometer ID	Install Date	Total Depth (ft. bgs)	Screen Interval (ft. bgs)
Pre-Development Supplemental Investigation Piezometer	B13	B13-086-PZ	2/9/2021	20	8-18
		B13-088-PZ	2/8/2021	20	5-15
		B13-089-PZ	2/4/2021	20	7-20
		B13-090-PZ	2/4/2021	12	2-12
		B13-091-PZ	2/8/2021	15	5-15

ft. bgs = feet below ground surface

ATTACHMENT 1



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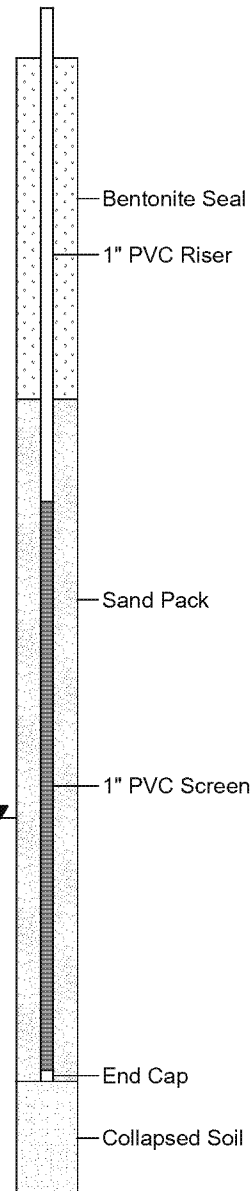
Boring ID: B13-086-SB PZ

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Client : EnviroAnalytics Group
ARM Project No. : 20010213
Project Description : Sparrows Point - Parcel B13
Site Location : Sparrows Point, MD
ARM Representative : L. Perrin
Checked by : M. Hritz, E.I.T.
Drilling Company : Connelly
Driller : J. Townsend
Drilling Equipment : Sonic Rig

Soil Boring Installation Date : 2/8/2021
Piezometer Installation Date : 2/8/2021
Casing/Riser/Screen Type : PVC
Borehole Diameter (in.) : 7.75 OD (4.25 ID)
Riser/Screen Diameter : 1"
Northing (US ft) : 561042.03
Easting (US ft) : 1462232.57
48-Hr DTW : 16.17' TOC
No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.1		(0-2.5') SLAG, SAND and GRAVEL-sized, with some SAND-sized, light gray and grayish brown, dry, non-plastic, non-cohesive	SW/GW	
	100	0.1		(2.5-5') Non-native SAND with trace SLAG GRAVEL, loose, brown, dry to moist, non-plastic, non-cohesive	SW	
5		0.1		(5-10') SLAG, SAND and GRAVEL-sized, with some non-native SAND, dry then wet at 10' bgs, light gray and grayish brown, dry, non-plastic, non-cohesive	SW/GW	
	100	0.0		(10-17') Non-native SAND and FILL, SAND and GRAVEL-sized, loose to medium dense, brown and grayish brown with trace red and yellow, then dark brown at 15' bgs, wet, non-plastic, non-cohesive	SW/GW	
10		0.0	None	(17-20') CLAY, soft, gray, very moist to wet, low plasticity, cohesive	CL	
	100	0.0				
15		0.0				
	100	0.0				
20		0.0		End of Boring		

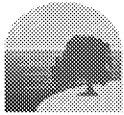


Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface

Riser Stickup: 2.80' ags
Riser: 0 - 8' bgs
Screen: 8 - 18' bgs [Slot Size: 0.010"]
Sand Pack: 6 - 18' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 6' bgs [Grain Size: bentonite chips]
Collapsed Soil: 18-20' bgs

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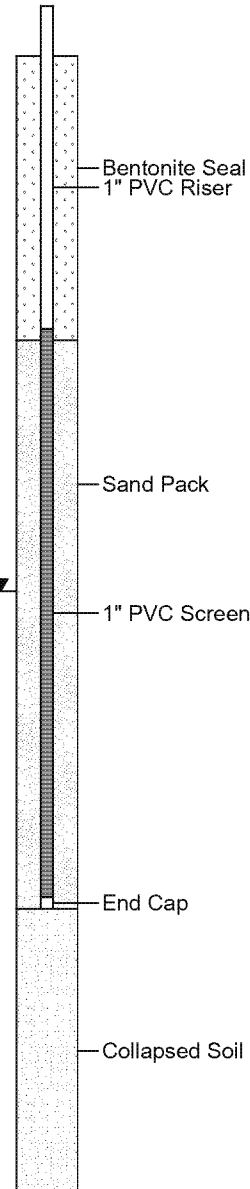
Boring ID: B13-088-SB PZ

(page 1 of 1)

Client : EnviroAnalytics Group
ARM Project No. : 20010213
Project Description : Sparrows Point - Parcel B13
Site Location : Sparrows Point, MD
ARM Representative : L. Perrin
Checked by : M. Hritz, E.I.T.
Drilling Company : Connelly
Driller : J. Townsend
Drilling Equipment : Sonic Rig

Soil Boring Installation Date : 2/4/2021
Piezometer Installation Date : 2/4/2021
Casing/Riser/Screen Type : PVC
Borehole Diameter (in.) : 7.75 OD (4.25 ID)
Riser/Screen Diameter : 1"
Northing (US ft) : 561538.53
Easting (US ft) : 1462025.37
48-Hr DTW : 11.80' TOC
No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.4	B13-088-SB-1	(0-8') Non-native SAND and SLAG, SAND and GRAVEL-sized, loose to medium dense, grayish brown, dark brown, and brown, dry, non-plastic, non-cohesive	SW/GW	Trace clay at 1' bgs
	100	0.5				
		0.5				
		2.9				
		12.5	B13-088-SB-5			
5		0.2			GW	Wet at 8' bgs
	100	0.2				
		0.2				
		0.2				
		0.4		(8-9') SLAG GRAVEL-sized, fine to coarse, light brownish gray, wet, non-plastic, non-cohesive		
10		1.9		(9-12.5') Non-native SAND and SLAG, SAND and GRAVEL-sized, with some SILT, medium dense, very dark gray, wet, non-plastic, non-cohesive	SW/GW	
	100	0.3				
		0.2				
		0.2				
		0.2		(12.5-15') SLAG, GRAVEL-sized, fine to coarse, light brownish gray, wet, non-plastic, non-cohesive		
15		0.2			GW	
	100	0.2				
		0.2				
		0.2		(15-16') Non-native SAND and SLAG, SAND and GRAVEL-sized, with some SILT, medium dense, very dark gray, wet, non-plastic, non-cohesive		
		0.2				
		0.3		(16-20') SLAG, GRAVEL-sized, fine to coarse, light brownish gray, wet, non-plastic, non-cohesive	GW	
	100	0.1				
		0.1				
20				End of Boring		



Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface

Riser Stickup: 2.39' ags
Riser: 0 - 5' bgs
Screen: 5 - 15' bgs [Slot Size: 0.010"]
Sand Pack: 3 - 15' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 3' bgs [Grain Size: bentonite chips]
Collapsed Soil: 15-20' bgs

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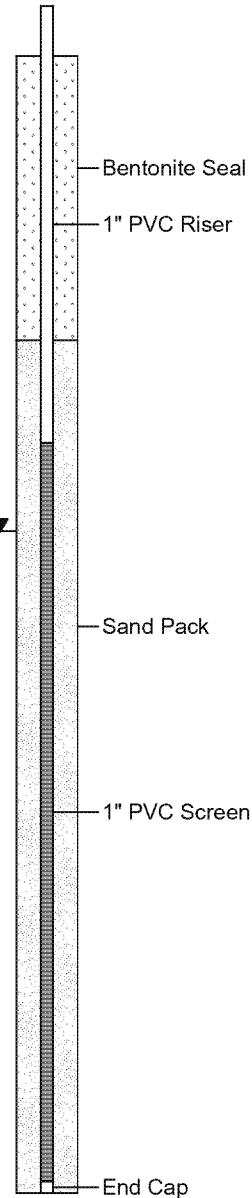
Boring ID: B13-089-SB PZ

(page 1 of 1)

Client : EnviroAnalytics Group
 ARM Project No. : 20010213
 Project Description : Sparrows Point - Parcel B13
 Site Location : Sparrows Point, MD
 ARM Representative : L. Perrin
 Checked by : M. Hritz, E.I.T.
 Drilling Company : Connelly
 Driller : J. Townsend
 Drilling Equipment : Sonic Rig

Soil Boring Installation Date : 2/4/2021
 Piezometer Installation Date : 2/4/2021
 Casing/Riser/Screen Type : PVC
 Borehole Diameter (in.) : 7.75 OD (4.25 ID)
 Riser/Screen Diameter : 1"
 Northing (US ft) : 561021.012
 Easting (US ft) : 1461801.33
 48-Hr DTW : 11.37' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B13-089-SB-1	(0-1') SLAG, GRAVEL-sized, with some SAND-sized, gray, dry, non-plastic, non-cohesive	GW	
60		-		(1-10') Non-native SAND and SLAG, SAND and GRAVEL-sized, loose to medium dense, light brown to brown, dry, non-plastic, non-cohesive		
		0.2				
		0.2	B13-089-SB-5			
5		-			SW/GW	
		-				
100		0.3				
		0.5				
		0.8	B13-089-SB-10			
10		0.5		(10-20') SLAG, SAND and GRAVEL-sized, medium dense, very dark brown, wet, non-plastic, non-cohesive		
		0.3				
100		0.2				
		0.2				
		0.2				
15		0.3			SW/GW	
		0.3				
100		0.3				
		0.3				
		0.2				
20				End of Boring		

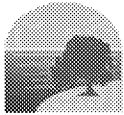


Wet at 10' bgs

Boring terminated at 20' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.01' ags
 Riser: 0 - 7' bgs
 Screen: 7 - 20' bgs [Slot Size: 0.010"]
 Sand Pack: 5 - 20' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 5' bgs [Grain Size: bentonite chips]

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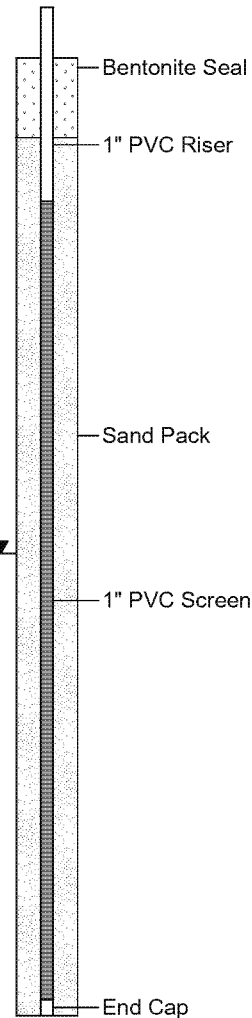
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 Drilling Company : Connelly
 Driller : J. Townsend
 Drilling Equipment : Sonic Rig

Soil Boring Installation Date : 2/8/2021
 Piezometer Installation Date : 2/8/2021
 Casing/Riser/Screen Type : PVC
 Borehole Diameter (in.) : 7.75 OD (4.25 ID)
 Riser/Screen Diameter : 1"
 Northing (US ft) : 561332.10
 Easting (US ft) : 1461794.70
 48-Hr DTW : 9.74' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B13-090-SB PZ

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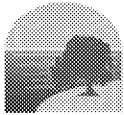
Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.4	B13-090-SB-1	(0-7') SLAG, SAND and GRAVEL-sized, loose to medium dense, light gray then brown at 2' bgs, dry then moist at 4' bgs then wet at 5' bgs, non-plastic, non-cohesive		
		1.2				
100		0.5				
		0.2			SW/GW	
		0.9	B13-090-SB-5			
5		0.2				
		0.2				
100		0.2		(7-10') SLAG, GRAVEL to COBBLE-sized, with trace SAND-sized, light gray, wet, non-plastic, non-cohesive	GW	
		0.3				
10		0.2		(10-12') SLAG, GRAVEL-sized, fine to coarse, medium dense, gray, wet, non-plastic, non-cohesive	GW	
		0.2				
15				End of Boring		



Wet at 5' bgs

Boring terminated at 12' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 3.53' ags
 Riser: 0 - 2' bgs
 Screen: 2 - 12' bgs [Slot Size: 0.010"]
 Sand Pack: 1 - 12' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 1' bgs [Grain Size: bentonite chips]



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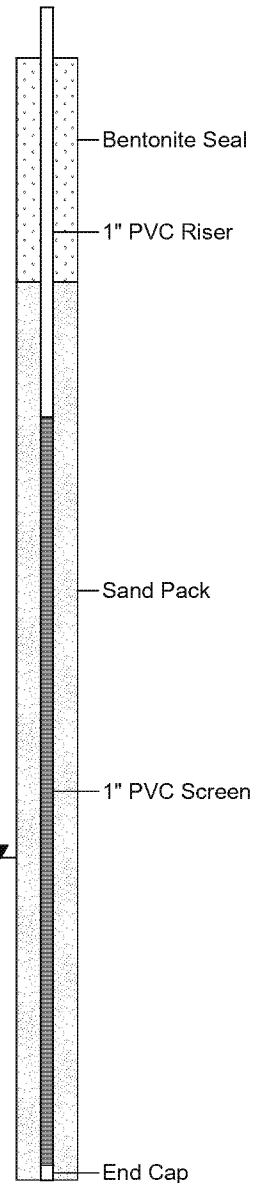
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 Checked by : M. Hritz, E.I.T.
 Drilling Company : Connelly
 Driller : J. Townsend
 Drilling Equipment : Sonic Rig

Soil Boring Installation Date : 2/8/2021
 Piezometer Installation Date : 2/8/2021
 Casing/Riser/Screen Type : PVC
 Borehole Diameter (in.) : 7.75 OD (4.25 ID)
 Riser/Screen Diameter : 1"
 Northing (US ft) : 561797.40
 Easting (US ft) : 1462000.40
 48-Hr DTW : 13.59' TOC
 No LNAPL or DNAPL detected at 0 or 48 hours

Boring ID: B13-091-SB PZ

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Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		0.0	B13-091-SB-1	(0-10') SLAG, SAND and GRAVEL-sized, loose grayish brown, dry then wet at 8' bgs, non-plastic, non-cohesive		
		0.0				
100		0.0				
		0.0				
		0.0	B13-091-SB-5			
5		0.2			SW/GW	
		0.6				
100		0.8				
		0.4				
		0.6				
10		0.2		(10-15') SLAG, GRAVEL-sized, fine to coarse, brownish gray, wet, non-plastic, non-cohesive		
		0.2				
		0.3			GW	
		0.2				
		0.2				
15				End of Boring		



Wet at 8' bgs

Boring terminated at 15' bgs due to water and piezometer installation
 TOC: Top of PVC casing
 DTW: Depth to water
 bgs: Below ground surface

Riser Stickup: 2.90' ags
 Riser: 0 - 5' bgs
 Screen: 5 - 15' bgs [Slot Size: 0.010"]
 Sand Pack: 3 - 15' bgs [Grain Size: WG #2]
 Bentonite Seal: 0 - 3' bgs [Grain Size: bentonite chips]